THE latest numbers of the *Chemical News* contain reprints of several papers on the new radiant substances discovered by M. and Mme. Curie. It is found that the radio-activity of polonium and radium can be communicated by contact to inactive bodies, such as many metals, paper, barium carbonate and bismuth sulfid, and this induced radio-activity persists for a considerable time.

MME. CURIE has concentrated by fractionation the radium which is associated with barium in the uranium minerals, and determined the atomic weights of the successive fractions—one fraction having an activity 3000 times that of uranium had an atomic weight of 140. (Ba = 137.8.) A later fraction of 7500 times uranium's activity had an atomic weight of 145.8, hence it seems that radium has a higher atomic weight than barium. In this work half a ton of uranium mineral was used and the radiferous barium chlorid which was fractionated amounted to two kilos. The spectrum of this concentrated radium was studied by Demarçay, and in addition to the spectrum of barium, very intense and complete, a series of new lines was found and measured. Some of these are very characteristic. It thus appears reasonably certain that radium has a definite position as a chemical element, and the properties of the purified substance will attract great interest when determined. Among the chemical effects of the salts of radium is the conversion of oxygen into ozone. This phenomenon seems to be connected rather with the radio-activity than with luminosity. Radium carbonate is very luminous, but produces less ozone than radium chlorid, which is much less luminous, but more strongly radio-active. If a radium salt is placed in a glass vessel, a violet coloration is seen in the glass which proceeds from the interior to the exterior. In ten days or so the bottom of the flask is almost black. This takes place in glass containing no lead. The effect of the Bacquerel rays upon barium platino-cyanid is also chemical. All these phenomena point to the fact that the rays emitted by radium present a continual development of energy.

J. L. H.

CURRENT NOTES ON METEOROLOGY.

THE WEST INDIAN HURRICANE OF AUGUST, 1899.

AN account of the West Indian hurricane of August 7–17 last, in the *Monthly Weather Review* for August (issued October 30), brings out several points worth noting here. The report from the Weather Bureau observer at Arroya, Puerto Rico, says that the Spanish steamship *Alava* took refuge in the Port of Jobos, and with all her anchors down and working full speed ahead, she dragged for half a mile. At Aguadilla, Puerto Rico, the passage of the calm central 'eye' of the storm occupied about one hour. At Nassau, considerable damage was done by the northeast wind, which backed to northwest, and fell calm. People then came out to gather up their scattered effects, when the wind suddenly began to blow from the southwest with great force. An aneroid reading of 27.75 inches, corrected for instrumental error and for elevation, was made at Guayama, Puerto Rico, and one of 28.11 inches was made at Juana Diaz.

RECENT PUBLICATIONS.

NOTE.—The unusually large number of recent publications of importance makes it necessary, in view of the limited space, to restrict our mention of them to a few lines only.

EVELYN B. BALDWIN: 'The Meteorological Observations of the Second Wellman Expedition,' *National Geographic Magazine*, December, 1899, 312–316. Mr. Baldwin is an official of the United States Weather Bureau, and was equipped with instruments by the Bureau. This is a preliminary report of his meteorological work.

FRANK H. BIGELOW: 'The probable State of the Sky along the Path of Total Eclipse of the Sun, May 28, 1900, Observations of 1899,' U. S. Department of Agriculture, Weather Bureau. Bulletin No. 27. 8vo. Washington, D. C., 1899. Pp. 23. Charts IV. This report summarizes, for the information of astronomers and others interested in the approaching eclipse, the results of observations made in 1897, 1898 and 1899 to determine the prevailing average cloudiness in the districts covered by the eclipse track.

FRANK H. BIGELOW: 'Some of the Results

of the International Cloud Work for the United States,' *American Journal of Science*, December, 1899, 433–444. A preliminary statement of results which are soon to be published *in extenso* by the Weather Bureau.

OLIVER L. FASSIG: 'Types of March Weather in the United States,' *American Journal of Science*, November, 1899, 319–340. A discussion of the relations existing between the mean atmospheric pressure, the prevailing character of the weather and the paths of storms.

WILLIS L. MOORE: 'Report of the Chief of the Weather Bureau for 1899,' U. S. Department of Agriculture, Weather Bureau. 8vo. Washington, D. C., 1899. Pp. 23.

B. S. PAGUE: 'The Mild Temperature of the Pacific Northwest, and the Influence of the Kuro Siwo.' 8vo. Portland, Ore., 1899. Pp. 11. Charts III. The author classifies the temperature conditions of the north Pacific Coast into continental, dynamic and oceanic types. He believes that dynamic heating of descending air is more effective than the influence of the ocean in producing the mild winter temperatures of the Pacific Northwest.

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RECENT ZOOPALEONTOLOGY.

Adaptive radiation of the Camels and Llamas.—Professor Scott advances the following hypothesis in his recent important memoir:

"The most interesting and striking result to which the study of the Uinta selenodonts has led is the very unexpected conclusion that, with the possible exception of the *oreodonts* and *agriochoerids*, all of the strictly indigenous North American *selenodonts* are derivatives of the tylopodan stem. Paradoxical as this conclusion may appear, I believe it to be fully justified by the evidence which will be laid before the reader. The Tylopoda are thus seen to be a very ancient and highly diversified group, comparable in this respect to the Pecora, or true ruminants, which they so closely resemble in many features. The Pecora are an Old World group, which underwent great expansion and diversifications in Eurasia, but did not reach this continent till late Miocene times, and never attained the importance here that they have so long had in the Eastern Hemisphere. Their place was, to a very great extent, taken in America by the Tylopoda, which ran a course of development in many ways parallel to that of the Pecora and Tragulina, but with a variety and diversity of structure, habit, and appearance, such as are not attained in either of the latter groups." It has long been known that the Camels and Llamas had their home on this Continent, but Professor Scott's hypothesis, that practically all the American Artiodactyls, except the pigs, sprang from a common cameloid stem, is of the greatest interest. If confirmed, it will take rank as a brilliant generalization resulting from recent exploration. Even if not confirmed, it will be of great value as stimulating closer inquiry into the natural relationships of the American even-toed Ungulates. *Trans. Wagner Free Institute*, Phila., May, 1899, Vol. VI.

The Pliocene Hyrax.—Pliohyrax Osborn is identical with *Leptodon* Gaudry. This rather dry announcement relates to an interesting extension of our knowledge of the Hyracoidea. For some years a skull found upon the Island of Samos awaited description in the Stuttgart Museum; Professor Fraas kindly placed it in the hands of Professor Osborn, who described it before the International Zoological Congress, at Cambridge, as a new and very remarkable form of *Hyrax* from the Lower Pliocene, as the only fossil representative of this order and as belonging to a distinct family of Pliohyracidae and a distinct genus *Pliohyrax krupii*. It now appears that the lower jaw found by Professor Gaudry in Pikermi, Greece, and long known as *Leptodon graecus* belongs to the same type as the above. Dr. Max Schlosser, of Munich, points this out in an interesting article in the *Zoologischen Anzeiger* of October. He leaves the animal among the Hyracoids and suggests that it is of South American origin, a suggestion of considerable probability and of very great interest.

Exploration for Dinosaurs.—Great activity prevailed last season in the search for the remains of Dinosaurs. A report of the parties exploring in the Dinosaur beds under the direction of Professor W. C. Knight has already been made in this JOURNAL. In addition to